

CLAIMS

1. Resin for a binder suitable for mineral fibers such as glass or stone wool, said resin comprising the reaction product of a polymer free mixture of an amine with a first anhydride and a second anhydride, 5 characterized in that the first and second anhydrides are different anhydrides.

2. Resin for a binder suitable for mineral fibers such as glass or stone wool according to claim 1, wherein the first anhydride is a cyclic, preferably an 10 aliphatic anhydride and wherein the second anhydride is a cyclic, preferably an aromatic anhydride.

3. Resin comprising a polymer free mixture for a binder, said resin comprising the reaction product of a cyclic anhydride and an amine, at a pH, preferably being 15 between 2.5 and 4.2, said pH being predetermined to positively influence the curing speed of the resin.

4. Resin according to any of the claims 1-3, wherein the aliphatic anhydride comprises tetrahydro phthalic anhydride, and/or hexahydrophthalic anhydride, 20 methyltetrahydrophthalic anhydride, succinic anhydride, nadic anhydride, maleic anhydride, glutaric anhydride.

5. Resin according to any of the claims 1 to 4 wherein the aromatic anhydride comprises phthalic anhydride and trimellitic anhydride and/or pyromellitic 25 dianhydride, methylphthalic anhydride.

6. Resin according to any of the preceding claims, wherein the amine, being a N-substituted beta hydroxy alkylamine, is selected from the group (di)ethanolamine, 1-(m)ethylethanolamine, n-butyl- 30 ethanolamine, 1-(m)ethylisopropanolamine, 3-amino-1,2-propanediol, 2-amino-1,3-propanediol, tris(hydroxymethyl)aminomethane, most preferably diethanolamine.

7. Binder for mineral fibres such as glass or stone wool, said binder comprising a resin according to any of the claims 1-6.

8. Binder comprising a resin according to claim 5 7 further comprising an accelerator and one or more resin additives such as aminopropyl siloxane to improve adhesion to glass, thermal and UV stabilizers, surface active compounds, fillers such as clay, silicates, magnesiumsulfate and pigments such as titanium oxide, 10 hydrophobising agents such as fluorine compounds, oils, minerals and silicone oils.

9. Binder according to claim 8 wherein the accelerator is selected from the group comprising sodium phosphinate, phosphinic acid, citric acid, adipic acid 15 and β -hydroxyalkylamid.

10. Binder according to claims 8 or 9 wherein the additives are selected from the group comprising mono-, di-, and polysaccharides, such as sucrose, glucose syrup, modified starch, starch urea dicyandiamid, 20 polyglycols, acrylics, furfural, carboxymethyl cellulose and cellulose, or polyvinyl alcohol.

11. Binder according to any of the claims 7-10 or resin according to any of the claims 1-6, wherein the concentration of aliphatic anhydrides is greater than the 25 concentration of aromatic anhydrides.

12. Binder for mineral fibers, particularly mineral wool comprising a resin according to any of the preceding claims 1-6, which has been cured.

13. Mineral fibre product, specifically a 30 mineral wool product, bound by a cured binder according to claim 12, or claims 7-11.

14. Process for providing a polymer free resin for a binder suitable for binding mineral fibre products, said process comprising the steps of mixing together 35 under reaction conditions an amine with a first anhydride and a second different anhydride, these preferably being an aliphatic, cyclic anhydride and a cyclic aromatic anhydride respectively.

15. Use of a resin according to any of the claims 1-6 in a binder according to claims 7-11.